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Sustainable development

Ensuring access to affordable, reliable, sustainable and modern energy for all

Report of the Secretary-General

Summary

Submitted pursuant to General Assembly resolution 72/224, the present report provides an overview of the progress made towards ensuring access to affordable, reliable, sustainable and modern energy for all and highlights action undertaken by Member States to accelerate the achievement of that objective. The report also presents key messages from the first review of Sustainable Development Goal 7 on ensuring access to affordable, reliable, sustainable and modern energy for all at the high-level political forum on sustainable development held in July 2018. Future milestones, including the 2019 session of the high-level political forum, the mid-point of the United Nations Decade of Sustainable Energy for All 2014–2024 and the upcoming climate summit of the Secretary-General, to be held in 2019, present global platforms for sharing lessons and inspiring further action in support of Goal 7.

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I. Introduction

1. The present report is submitted pursuant to General Assembly resolution 72/224, in which the Assembly requested the Secretary-General to submit, at its seventy-third session, a report on its implementation, including activities carried out to mark the United Nations Decade of Sustainable Energy for All 2014–2024, and decided to include in the provisional agenda of its seventy-third session, under the item entitled "Sustainable development", the sub-item entitled "Ensuring access to affordable, reliable, sustainable and modern energy for all", unless otherwise agreed.

II. Energy in the context of the 2030 Agenda for Sustainable Development

2. Energy is central to the achievement of both the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change. Energy is inextricably interlinked to many Sustainable Development Goals, including poverty eradication, food security, clean water and sanitation, health, education, prosperity, job creation and the empowerment of youth and women. Access to affordable, reliable, sustainable and modern energy for all is fundamental to human development. A shift towards sustainable energy solutions is also essential to the achievement of the Paris Agreement as adopted under the United Nations Framework Convention on Climate Change.

3. Sustainable Development Goal 7, which is intended to "Ensure access to affordable, reliable, sustainable and modern energy for all", represents the first-ever universal goal on energy, with five targets pertaining to access, efficiency, renewables and means of implementation.

4. In July 2018, the high-level political forum on sustainable development undertook the first global review of Goal 7 under the auspices of the Economic and Social Council, providing a first critical milestone in taking stock of progress to date on Goal 7 and its interlinkages with other Sustainable Development Goals. Many Member States undertook voluntary national reviews to assess progress towards the 2030 Agenda for Sustainable Development, including Goal 7. A multi-stakeholder technical advisory group on Goal 7 was convened by the Department of Economic and Social Affairs to provide technical input for the review of Goal 7 at the high-level political forum.

5. The achievement of Goal 7 is within reach. Discussions held during the review of the Goal at the high-level political forum highlighted that advances in technologies, rapid cost declines, strategic shifts in policies, new business models and a growing number of best practices are accelerating the transformation of the energy systems in many places and bringing Goal 7 within reach. To leave no one behind, we must capitalize on this momentum to mobilize greater political will and cooperation, together with higher levels of public and private investment in a sustainable energy future.

6. Without urgent action, however, the world will fall short of the achievement of Goal 7, and consequently other Sustainable Development Goals. Approximately 1 billion people currently live without electricity, while almost 3 billion people lack access to clean-cooking solutions. Although power generation using renewable energy is expanding rapidly, little progress has been made on integrating renewable energy into end-use applications. Meanwhile, the current rate of improvement in energy efficiency is less than what is needed to meet the global target. Financial flows, including public and private investments in energy, are also falling short.

7. All stakeholders should step up and focus their efforts in support of Goal 7. Future prominent global events, including the high-level political forum, the sessions of the Conference of the Parties to the United Nations Framework Convention on Climate Change and the upcoming climate summit to be convened by the Secretary-General in 2019, present key platforms for sharing lessons and inspiring further action. The United Nations Decade of Sustainable Energy for All 2014–2024 should be leveraged to spur international momentum.

III. Progress towards ensuring access to affordable, reliable, sustainable and modern energy for all

8. Emerging experiences across countries and sectors provide valuable insights for accelerating global progress towards the achievement of Sustainable Development Goal 7. Even more encouraging than emerging global trends are the strong gains evident within specific countries in both the developed and developing worlds. Evidence is mounting that with holistic approaches, targeted policies and strengthened international cooperation, substantial gains can be made in clean energy and energy access that will improve the lives of billions of people and leave no one behind.

9. The following sections of the report draw on the report of the Secretary-General to the Economic and Social Council on progress towards the Sustainable Development Goals (E/2018/64), the compilation of main messages for the 2018 voluntary national reviews (E/HLPF/2018/5), policy briefs on accelerating the achievement of Goal 7 in support of the first review of Goal 7 at the high-level political forum in 2018 compiled by the technical advisory group on Goal 7, including submissions by over 50 United Nations entities and other organizations, and "Tracking SDG 7:The energy progress report 2018", a joint report by the International Energy Agency, the International Renewable Energy Agency, the Statistics Division of the Department of Economic and Social Affairs, the World Bank Group and the World Health Organization.

A. Global overview

Access to electricity

10. At present, approximately 1 billion people worldwide live without electricity. From 2000 to 2016, the proportion of the world's 1 population with access to electricity increased from 78 per cent to 87 per cent, with the number of people living without access to electricity dipping to just around 1 billion. If current trends continue, 674 million people will still be living without access to electricity in 2030. To reach universal access by 2030, the rate of access to electricity needs to be increased by 0.8 per cent each year.

11. Hopeful signs are seen in lagging regions, with off-grid solutions starting to make a difference to complement grid electrification:

(a) Countries in the regions that are the furthest behind increased their electricity access rates during the 2014–2016 period, reaching a rate of 86.7 per cent in Central Asia and Southern Asia and 43 per cent in Sub-Saharan Africa by 2016: the absolute access-deficit in Sub-Saharan Africa, which peaked in 2015 at 595.3 million people, began to fall for the first time, by 28.5 million, people in 2016;

(b) Off-grid solutions are emerging as an important driver of rural electricity access: emerging evidence suggests that off-grid solar electricity reaches about 141 million people in rural areas in the developing world, complementing grid

electrification, and that the uptake is highly concentrated in about a dozen pioneering countries;

(c) Affordability remains a key concern. Estimates suggest that, even in countries with universal access, affordability concerns affect about 30 per cent of the population; in countries working toward universal access, affordability affects 57 per cent of those who already have access.

Access to clean fuels and technology

12. At present, in 2018, approximately 3 billion people lack access to clean cooking solutions. Access to clean fuels and technologies for cooking has gradually improved, reaching 59 per cent globally in 2016, up 10 percentage points since 2000. Even with this progress, however, almost 3 billion people are still cooking with polluting fuel/stove combinations. To reach universal access to clean cooking by 2030, the annual rate of clean cooking access needs to increase to 3 per cent. If the current trajectory continues, 2.3 billion people worldwide will remain without access to clean cooking in 2030.

13. Success stories in clean cooking are rare:

(a) While parts of Asia have seen access to clean cooking outpace population growth, in Sub-Saharan Africa gains have only been marginal, with the region's overall population growing four times faster than the population that gained access to clean cooking technologies in the years between 2014 and 2016;

(b) The need for rapid deployment of clean cooking fuels and technologies has not received the political attention it deserves, despite the lower costs required to ensure clean cooking solutions for all in comparison to electrification. A combination of factors, including high entry costs for many clean cooking solutions, a lack of consumer awareness of their benefits, financing gaps for producers seeking to enter the market, slow progress in the innovation of clean cookstoves and lack of infrastructure for fuel production and distribution have kept widespread solutions to this challenge out of reach.

Renewable energy

14. Modern renewable power generation is expanding rapidly, but much greater efforts will be required to achieve Goal 7. In recent years, rapidly falling costs and policy support have made solar and wind cost competitive with conventional power generation sources in many places. Globally, such sources currently account for over 50 per cent of annual global power capacity. However, in 2015, total global renewable energy consumption increased only marginally, to 17.5 per cent, from 17.3 per cent in 2014, revealing a lack of progress in the use of renewables for transport and heating/cooling.

15. It is clear that progress in the field of renewable electricity has not yet been matched by progress in heating, cooling and transport:

(a) Significant progress has been seen in several countries: China alone accounting for nearly 30 per cent of absolute growth in renewable energy consumption globally in 2015; Brazil was the only country among the top 20 largest energy consumers to substantially exceed the global average renewable share in all end uses (electricity, transport and heating); while in the United Kingdom of Great Britain and Northern Ireland, the share of renewable energy in total final energy consumption grew by 1 percentage point annually, on average, since 2010 — more than five times the global average over the same period;

(b) Much greater efforts will be required in end-uses, such as heating/cooling and transport, which together account for 80 per cent of global energy consumption and where renewable penetration remains low, yet unexploited potential exists: one avenue would be greater adoption of district energy systems (for heating or cooling) based on biomass, geothermal or solar thermal energy — as the electricity sector decarbonizes, other energy uses can increasingly switch into electricity, including electric vehicles;

(c) Furthermore, sustaining growth of the renewable electricity sector will require additional attention to grid integration issues, including the incorporation of battery storage and smart grid technology to support the management of variable generation resources.

Energy efficiency

16. The global rate of improvement in energy efficiency accelerated recently. From 2014 to 2015, global primary energy intensity, the measure of energy efficiency, fell by 2.8 per cent, the fastest decline since 2010. However, energy intensity needs to fall at an annual rate of 2.7 per cent over the 2016–2030 period, compared with the average rate of 2.2 per cent per year over the 2010–2015 period, necessitating a significant ramp-up in global policy ambition.

17. There is growing evidence of the decoupling of growth and energy use:

(a) Global gross domestic product grew nearly twice as fast as primary energy supply in the 2010-2015 period: in fact, economic growth outpaced growth in energy use in all regions, except for Western Asia, and in all income groups;

(b) Improvement in industrial energy intensity, which is the largest energy consuming sector, was particularly encouraging, with a reported reduction of 2.7 per cent per annum since 2010, however, progress was more modest elsewhere, including in transportation, residential energy consumption and power generation, transmission and distribution;

(c) Energy efficiency policies still need to be systematically adopted in many countries: building codes for residential and commercial facilities should include energy performance standards for new construction and major renovation, and the adoption of ambitious cross-sectoral integrated policy approaches that promote improvement in energy efficiency through targets or fiscal incentives, as have been applied with some success in China and in some countries in Europe, is vital.

Finance and investment

18. Financing for the achievement of Goal 7 will need to double globally. Financing for Goal 7currently stands at level of about $500 billion per year, while $1 to $1.2 trillion per year will be needed until 2030 to achieve the Goal. Investment is not spread equally, with developed countries and some middle-income countries gaining access to financing, but many developing countries being left out.

19. The financing requirements for universal electrification are estimated at $52 billion per year up to 2030, primarily for India and countries in sub-Saharan Africa. To date, nearly all investment has been directed to grid expansion, with donor financing accounting for 55 per cent of total investments in 2013. Financing for private sector off-grid solutions has started to take off, albeit from a low base, in particular for pay-as-you-go solar home systems.

20. The financing requirements for universal access to clean cooking solutions are estimated at $4.4 billion per year up to 2030, although the current level of funding is

negligible, at only about $240 million in 2014 according to one estimate. Private financing in this sector is very limited.

21. Renewable energy financing requirements are estimated at $442 to $650 billion per year until 2030. Actual renewable energy investment was $263 billion in 2016. Developing countries accounted for 48 per cent of 2016 investment, with China being the biggest recipient. Globally, 90 per cent of renewable energy investment in 2016 was financed by private sources.

22. Energy efficiency financing requirements to achieve Goal 7 are estimated at $560 billion per year up to 2030. Overall energy efficient investment was $231 billion in 2016, with energy efficient measures in buildings accounting for almost 60 per cent of that total.

Capacity-building

23. Strengthened capacity-building is necessary to ensure the effective implementation of Goal 7. Across countries, a wide variety of capacity-building strategies and activities have been used to promote access to clean energy, and a wider deployment of energy efficiency and renewable energy technologies and services. These lessons need to be synthesized to provide a solid basis for scaling up capacity-building efforts, including on enabling frameworks, technology cooperation, investment measures, the transfer of technical know-how and staff training activities.

Technology and innovation

24. Energy technology innovation, which is accelerating at a historically unprecedented pace, is driven by a convergence of forces that are reshaping the electric power industry (including climate change, the need for resilient infrastructure, increasing stress on resources and decentralized supply). While driven mainly by economies of scale, innovation has helped enable dramatic reductions in the costs of key renewable energy technologies. For example, the cost of solar photovoltaic modules dropped by over 80 per cent over the past seven years, and the global weighted average levelized cost of electricity fell by 73 per cent, to $0.10/kWh, in 2017. Significant further innovation is needed, however, in all aspects of the energy system if we are to markedly accelerate the energy transition, achieve the SDG 7 targets and meet the challenges set out in the Paris Agreement on Climate Change.

Data and monitoring

25. Sustained efforts are needed to improve data quality and availability, in particular improvement in the scope and precision of household survey questionnaires to more accurately reflect the nature and quality of service in the provision of electricity and clean cooking. Current indicators do not capture the affordability and reliability dimensions emphasized in Goal 7. Moreover, the off-grid solar revolution is making it increasingly challenging to accurately reflect trends in rural electrification. It is equally important to strengthen statistical capacity to produce accurate energy balances, particularly in the developing countries, where many challenges remain in capturing, for instance, the traditional uses of biomass. There is still relatively little information on the energy efficiency of major consuming sectors outside the major economies, which is critical to inform policy interventions.

B. Regional overview

Africa

26. Existing policies and commitments alone are unlikely to enable most of the countries in Africa to achieve Goal 7. Roughly the same number of people are likely to be without access to electricity in 2030 as in 2016 (590 million), while the number of people without access to efficient and clean cooking will reach 900 million by 2030.

27. Renewable electricity capacity exceeded 38 GW in 2016 (about 23 per cent of the total), driven mainly by developments in wind, solar photovoltaic, geothermal and large-scale hydropower. Energy intensity remains high. To ensure the attainment of Goal 7 in Africa by 2030, an investment of approximately $34.2 billion per year will be needed.

28. Priority actions for Africa should include: putting in place coherent policies and enabling environments to mobilize investment; addressing data gaps and statistical reliability; developing in-country human and institutional capacities; integrating climate resilience into the planning and implementation of energy infrastructure and investments; promoting the sharing of good practices and experiences; systematically prioritizing energy efficiency across all sectors; promoting local engagements across the full renewable energy value chain; and accelerating efforts to encourage innovation, research and development at the regional level.

Arab region

29. Access to electricity is close to universal in cities across the Arab region, but the rate remains at approximately 80 per cent in rural areas; as reported in 2014, a total of around 36 million people were without access to electricity. The share of the region's population using clean cooking fuels and technologies has risen continuously since the early part of the century, and stood at 88 per cent in 2014 overall, ranging from close to 100 per cent access in the States members of the Gulf Cooperation Council and the countries in the Mashreq, to less than 40 per cent in the least developed countries of the region.

30. The region has a huge potential for renewable energy, and countries such as Morocco, Saudi Arabia and the United Arab Emirates are aggressively developing modern renewable energy generation, fuelled by rapid cost reductions and technological advancements. However, renewable energy, reported at 4 per cent of total final energy consumption in 2014, including biomass, still plays a marginal role in most Arab countries. No reduction in energy intensity has been observed in the region over the past 25 years, while energy consumption has more than doubled since 1990.

31. Priority actions in the region should include: implementing policies and institutional frameworks to boost renewable energy and energy efficiency measures and practices; building institutional capacity, transparency and accountability; monitoring and data collection systems; promoting information-sharing; strengthening communication between Governments, financial institutions and the public and private sectors; enforcing proactive and integrated policies for sustainable natural resources management; promoting a more rational use of the region's fossil fuel resources; enhancing interregional Arab cooperation and trade; and developing local manufacturing of renewable energy technologies components.

Asia and the Pacific

32. The countries of Asia and the Pacific are on track to reach nearly universal access to electricity by 2030, although there are still over 420 million people without access to electricity, almost 10 per cent of the region's population. Some countries, mainly Pacific islands, still have acutely low access rates. However, the region is far from being on track to achieve universal clean cooking access by 2030: almost 2.1 billion people, nearly half the population of the region, rely on polluting and unhealthy cooking fuels and technology.

33. The share of renewable energy reached 18.3 per cent of the region's total final energy consumption in 2014, up from a low of 17.9 per cent in 2011. Modern renewables comprised 6.8 per cent of total final energy consumption in 2014, up from 6.2 per cent in 2012. The region has demonstrated a long-term steep decline in energy intensity by over 30 per cent in the years from 1990 to 2014.

34. Priority actions should include maintaining the existing momentum, the commitment of Governments to universal electricity access, urgently establishing national and regional targets for clean cooking fuels and technologies, putting in place supportive policies and initiatives to promote renewable energy and tightening energy efficiency regulations.

Latin America and the Caribbean

35. The number of people without access to electricity in Latin America and the Caribbean fell from 44 million in 2000 to 18 million in 2014. If current growth rates are maintained, universal electricity access can be achieved by 2030. In urban areas, coverage in 2014 was 99 per cent while in rural areas it reached over 88 per cent of the population. The countries with the largest deficits included Bolivia (Plurinational State of), Guatemala, Guyana, Haiti, Honduras and Nicaragua.

36. Access to modern energy sources for cooking has been improving, and was up to 86.5 per cent in 2014, although over 84 million people still lacked access as of 2014. Annual rates of expansion have declined in recent years, and at current rates of progress (roughly 0.5 per cent per year), Goal 7 will be unachievable.

37. The region has the lowest energy intensity in the world. However, it also has the lowest annual rates of improvement (about 0.5 per cent per year on average between 1990 and 2010). At the pace of progress (which dropped to 0.3 per cent between 2012 and 2014) it will be impossible to double the rate of improvement in energy efficiency by 2030. In 2014, renewable energy sources represented 27.2 per cent of total final energy consumption and modern renewable energies represented 22.9 per cent of total final energy consumption.

38. Priority actions should include: developing suitable institutional and regulatory frameworks for attracting investment; implementing policies that encourage the development of renewable energies, including wind and solar; intensifying national programmes to promote the use of efficient and clean wood-burning stoves; strengthening the institutional and regulatory frameworks for energy efficiency; developing national energy efficiency plans; and promoting greater rationalization of the transport sector.

Economic Commission for Europe

39. Attainment of Goal 7 is falling short in the States members of the Economic Commission for Europe. Specific circumstances in parts of the region have led to the inefficient use of energy, power cuts, increasing energy costs and unsustainable and

unaffordable heating in winter. Some countries export large quantities of fossil fuels and have some of the world's highest levels of energy intensity.

40. The region has achieved 100 per cent access to electrical power networks and 98 per cent access to clean cooking fuels, although there are significant quality and affordability challenges. The rate of progress in improving energy intensity in the region has been around -2 per cent per annum since 2012, while a rate of -2.6 per cent is required to meet the 2030 Goal. Annual renewable energy investment in the region needs to more than double to achieve Goal 7.

41. Priority actions should include: reflecting the full costs of energy production and use in energy prices; rationalizing the use of energy subsidies to remove market distortions while protecting vulnerable groups; reducing market barriers to sustainable energy technology; exploring ways to accelerate energy efficiency uptake; developing sustainable frameworks to promote investment in renewable energy; improving understanding of the interplay between efficient distribution networks, flexible fossil fuel plants and variable renewables; reducing the carbon intensity of the energy sector; establishing energy efficiency standards in buildings; adopting the United Nations Framework Classification for Resources as a tool for sustainable resource management; and promoting the sharing of knowledge and information on technology, market design, transition processes and efficient pathways.

Least developed countries, landlocked developing countries and small island developing States

42. Least developed countries, landlocked developing countries and small island developing States together consist of 91 countries with a total population of about 1.1 billion people. Access to energy in these vulnerable countries remains a major challenge. In 2016, the proportion of the population in least developed countries with access to electricity was 44.8 per cent; in landlocked developing countries it was 53.1 per cent; and in small island developing States it was 76.3 per cent.

43. Across the least developed countries, the share of traditional and modern renewables in total final energy consumption was 67.8 per cent in 2015, while it was 53 per cent in landlocked developing countries. In both cases the use of traditional biomass remained the largest source of renewable energy. Improving energy efficiency is also a priority for all vulnerable countries, and in most of them there has only been a small improvement in the overall situation. One crucial factor in increasing energy efficiency is the improvement of transmission and distribution systems.

44. Vulnerable countries often pay a considerably higher price for electricity. The average cost of electricity in capital cities of least developed countries is reported at $22.4¢/kWh, compared to the cost in developed countries, for example the United States of America, where the commercial rate in 2016 was reported at 10.08¢/kWh. The cost of electricity in least developed countries ranges from $5.7¢/kWh (Bhutan) to $96¢/kWh (Solomon Islands). Countries that are highly dependent on imported fossil fuels tend to have very high rates.

45. Priority actions should include: creating enabling environments to catalyse private sector investment; increasing developing assistance allocated to sustainable energy in least developed countries, landlocked developing countries and small island developing States; supporting project preparation to fast track progress; enhancing integration of regional/cross-border energy infrastructure and institutions to ensure economies of scale; creating cross-sectoral linkages between sustainable energy and other development priorities; and ensuring that the national energy policies take into consideration the energy demand profile of the poorest people, including the promotion of productive uses of energy.

C. Member States

46. For the high-level political forum on sustainable development, held in July 2018, 46 countries undertook voluntary national reviews of their progress in the implementation of the 2030 Agenda for Sustainable Development. The national reviews aimed at facilitating the sharing of experiences, including successes, challenges and lessons learned, with a view to accelerating the implementation of the 2030 Agenda and the Sustainable Development Goals. Based on the reviews submitted to the high-level forum, and for illustrative purposes only, some examples of country-level experiences related to Goal 7 are highlighted below.

Armenia

47. In Armenia, a strong regulatory and institutional framework has been developed to boost the production of renewable energy and enhance energy efficiency in industry, in rural and urban communities and in households. In this context, effective Government programmes and economic measures were introduced to ensure universal access to reliable electricity for the entire population, including in rural and urban areas. The share of renewable energy in the total final energy consumption of the country has been increasing, reaching 14.1 per cent in 2016 — this growth is largely the result of growth in the fields of hydro power and solar power.

Australia

48. The Australian Government is committed to ensuring access to affordable, reliable power, while meeting its commitments under the Paris Agreement on Climate Change. Australia's electricity sector is being transformed by the rapid growth in renewable energy, shifting consumer demand and the need to deliver affordable, reliable and secure supply while meeting the country's emissions reduction commitments. Australia has made a considerable investment in the development of clean energy technology and projects to improve energy efficiency in all areas, including agriculture, educational institutions, housing, infrastructure and manufacturing.

Burkina Faso

49. The Government of Burkina Faso intends to meet 100 per cent of national electricity needs in urban areas and 40 per cent in rural areas with reliable and affordable electricity by 2025. Significant efforts are under way to achieve this, including the inauguration of the largest solar power plant in West Africa in 2017. The 33 MW power plant, located in Zagtouli, has 129,600 solar panels over a surface of 60 hectares.

Bangladesh

50. Bangladesh has made considerable progress in providing electricity access in recent years. The major sources of renewable energy in Bangladesh are solar and wind energy. The innovative financing model for home solar systems has led to rapid expansion of their use and over 4.5 million such systems have been installed. As a result, more than 100,000 jobs have been generated. The energy output from solar increased from 51 GWh in 2010 to 212 GWh in 2014.

Canada

51. Thanks to an abundance of hydro power and advanced nuclear technology, the electrical supply in Canada is among the least expensive and cleanest in the world. In 2015, Canadian households spent an average of $4,198 on energy. Fully 80 per cent

of electricity comes from non-emitting sources, which has enabled Canada to make significant progress towards the achievement of Goal 7. Canada is making generational investments in clean energy and energy efficiency, and is introducing policies that will accelerate the transition to renewable sources of energy. In addition, Canada has addressed the interlinkages between energy and gender equality through a series of initiatives that could influence not only the gender balance within the energy sector, but also increase employment opportunities and financial independence for women around the world, including through the "Clean Energy Education and Empowerment" initiative and the "Equal by30" campaign.

Egypt

52. In Egypt the energy sector has undergone a substantial upgrade, improving its capacity to produce, transport and distribute electricity. Egypt has increased its capacity to produce electricity by at least 15 gigawatts of electricity by using advanced, sustainable and efficient technologies. The national energy strategy is aimed at increasing the share of renewable energy to 42 per cent by 2035. The Government has also enacted major reforms in the legal framework of its electricity sector, opening the door for increased participation of the private sector and the effective regulatory role of the State. Efforts to increase production, efficiency and sustainability in the energy sector are consistent with Egypt's vision to become the energy hub of the Eastern Mediterranean.

Jamaica

53. Energy security and efficiency are critical to Jamaica's sustainable transformation to developed country status. Notwithstanding the downward trend seen over the past decade, Jamaica still has one of the highest energy intensities in the Latin America and Caribbean region, and, like many other small island developing States, is heavily reliant on imported fossil fuels. Policy, legislative and operational reforms, anchored in "Vision 2030 Jamaica" and the national energy policy 2009–2030, are under way to address the main challenges in the sector.. Since the adoption of the national energy policy, there have been, tangible gains with respect to energy security, efficiency and fuel diversification, including increased use of cleaner and renewable sources of energy. Jamaica has also engaged in the expansion of energy-related infrastructure and the upgrade of technology to modernize and diversify its energy options.

Lithuania

54. Innovative solutions and smart energy are the basis of Lithuania's modern and sustainable economy. The implementation of the national energy independence strategy strengthens the country's energy security and competitiveness and promotes energy prosumerism. Lithuania has built a liquefied natural gas terminal and launched Lithuanian-Swedish and Lithuanian-Polish inter-system power links. The share of renewable energy accounts for almost 26 per cent of gross final energy consumption, and heat from renewable energy sources exceeds 46 per cent of the gross.

Niger

55. Regarding access to affordable, reliable, sustainable and modern energy for all, it should be noted that only 3.7 per cent of the population of the Niger used mostly clean fuels and technologies in 2015. To rectify this situation and to achieve Goal 7, the Niger is continuing to implement a national action plan for renewable energies, which will eventually reduce the use of biomass as a source of energy significantly.

Paraguay

56. Paraguay, the world's largest producer, per capita, and largest exporter of clean renewable electricity, welcomed the Sustainable Water and Energy Solutions partnership concluded between the Department of Economic and Social Affairs and the Itaipu Binacional international hydropower association to promote the sustainability of water and energy in line with Sustainable Development Goals 6 and 7. Under the partnership, a model office was established on the Paraguayan side of the Itaipu dam with the aim of creating a global sustainability network to provide a platform to support the achievement of the Sustainable Development Goals.

Qatar

57. Qatar has worked to ensure access to affordable, reliable, sustainable and modern energy for all. To that end, it has begun developing alternative energy sources, including the Umm al-Houl power plant project and the Siraj Solar Energy project. The country is also promoting the efficient utilization of energy and gas through its national committee on renewable energy. In that connection, the Qatar District Cooling Company has implemented a plan to use treated wastewater instead of potable water to operate its cooling plants. Qatar has also continued to implement its energy efficiency programme. Since its inception in 2012 and up to the end of 2016, the programme has reduced per capita consumption of electricity by 18 per cent and consumption of water by about 20 per cent.

Romania

58. Romania's low dependency on imported energy resources, combined with structural changes in the economy, is leading to the downsizing and relative decline of energy-intensive industries, helping the country to avoid major disruptions during Europe's recurring energy crises. Romania has a geographical location that favours wind, solar and water energy, as well as mineral resources, and it has significant untapped potential as a result of savings gained through sustainable development and from the circular economy. In the past 15 years, the country has managed to achieve a renewable energy share in energy production of just over 24 per cent, a target that has been settled for the year 2020, mainly with the help of solar panels and wind power, supplemented by the use of cogeneration of electricity and other energy sources.

Saudi Arabia

59. The energy sector has played a crucial role in achieving the Sustainable Development Goals in Saudi Arabia. Under the national transformation programme, the country has set a target to produce 3.45 GW of renewable energy by 2020, thus raising the share of renewable energy to 4 per cent of total energy produced. In this regard, the Vision 2030 initiative sets a target of 9.5 GW for the production of renewable energy by 2030, which is equivalent to 10 per cent of the total energy produced nationwide. The national energy efficiency programme is designed to increase efficiency in three main sectors that together account for over 90 per cent of national energy consumption: buildings; industry; and land transportation. Recently, by bringing the minimum energy efficiency ratio of small capacity air conditioners into line with international specifications, the country achieved an energy savings of 37 per cent.

Sri Lanka

60. Sri Lanka has over 98 per cent coverage of domestic electricity supply, and renewable sources account for 53 per cent of the total primary energy supply.

However, as rising dependency on imports and the cost of energy are presenting challenges, the Government is exploring renewable energy options, demand side management and regulation of the sector.

Togo

61. The overall rate of access to electricity in Togo rose from 22.5 per cent in 2008 to 35.6 per cent in 2016, and the rural electrification rate increased from 3 per cent in 2008 to 6.3 per cent in 2016. With regard to access to sustainable energy for the rural and landlocked populations, four solar photovoltaic solar power plants with a cumulative total capacity of 600 kW have been installed, as well as 10,000 solar streetlights in the five regions of the country. Launched in June 2018, Togo's new electrification strategy seeks to shift the electrification paradigm. In adopting this strategy, Togo has made a firm commitment to the achievement of sustainable energy transition and access to electrical power for the entire population by 2030.

United Arab Emirates

62. The Government of the United Arab Emirates has invested significantly in sustainable energy and is increasingly considered a major global hub for renewables through its pioneering initiatives and projects on green technologies. In January 2017, the national energy strategy for 2050 was unveiled as the first unified energy strategy for the country. The strategy, which is a joint effort of all energy-related authorities and executive councils in the United Arab Emirates and is under the supervision of the federal government, aims to increase the contribution of clean energy in the total energy mix to 50 per cent resulting in savings of $190 billion by 2050. The plan will be implemented in three phases: (a) accelerate the move to efficient energy consumption, ensure stable sources of energy and diversify energy sources; (b) find new energy-efficient solutions for transportation; and (c) focus on research and development and enhance innovation and creativity in the supply of sustainable energy.

Uruguay

63. Uruguay has been successful in the area of energy and is a world leader in the use of renewable sources. Its success has been underpinned by a long-term State policy and a solid regulatory and institutional framework. Uruguay has one of the highest rates of electricity coverage in Latin America, with access to electricity for 99.7 per cent of the country's population.

Viet Nam

64. Viet Nam has introduced a number of significant policies, including the adoption of a law on electricity, with the goal of providing sustainable electricity to meet the socioeconomic needs of the population and the country at large. In this regard, the eighth national electricity plan is aimed at ensuring that most rural households have access to electricity by 2020. Viet Nam's renewable energy development strategy to 2030, in conjunction with a Vision to 2050 initiative, sets specific targets relating to the ratio of renewable energy within the country's energy structure, in particular the achievement of the generation of 7 per cent of electricity from renewable energy by 2020 and 10 per cent by 2030. Viet Nam has also enacted a law on the economic and efficient use of energy and national energy development until 2020, as well as a Vision to 2050 initiative, to promote more efficient use of energy in production and consumption. The strategy of cleaner production in the industry sector by 2020 has also led to cleaner production practices by industry, including practices in energy, material and fuel consumption that are 5 to 8 per cent

cleaner. Overall, Viet Nam's current energy policies largely reflect key aspects of Goal 7.

D. Interlinkages between energy and other Sustainable Development Goals

65. Advancement in Goal 7 has the potential to spur progress on all of the Sustainable Development Goals, including the Goals on poverty eradication, gender equality, mitigation of and adaptation to climate change, food security, health, education, sustainable cities and communities, clean water and sanitation, jobs, innovation, transport and refugees and other situations of displacement. To realize this opportunity, closer cross-sectoral cooperation is needed at all levels between actors and decision makers, as well as measures to address the following important areas of sustainable development practice:

(a) Access to clean fuels and technologies has the potential to save millions of lives each year: household air pollution resulting from the inefficient use of clean fuels and technologies for cooking is alone responsible for some 4 million deaths annually;

(b) Effective action towards a low-carbon and climate-resilient energy system is essential for achieving the objectives of the Paris Agreement on Climate Change and the 2030 Agenda for Sustainable Development: the energy sector accounts for roughly two-thirds of all anthropogenic greenhouse-gas emissions;

(c) Globally over 291 million children go to primary schools without any electricity: Sub-Saharan Africa has the lowest rate, with 35 per cent, followed by South Asia with 48 per cent;

(d) The clean energy transition generates jobs: the renewable energy sector worldwide employed 9.8 million people worldwide in 2016, and energy efficiency and renewable energy are creating more jobs than the fossil fuel industry, enabling net employment gains;

(e) Energy and water are closely interlinked and interdependent: if Governments and industries continue with business as usual, it will be impossible to meet the simultaneous huge increases in water and energy demands in the next decades - the inextricable linkages between these two critical resources requires a suitably integrated approach;

(f) Cities globally consume up to 75 per cent of energy, and are responsible for 70 per cent of greenhouse gas emissions: promoting sustainable cities requires coordinated multisectoral investments and integrated policies;

(g) Access to clean fuel and electricity is essential to meet the needs of the over 134 million people in need of humanitarian assistance due to conflict, natural disasters, and other complex global challenges: a group of United Nations entities and other stakeholders has developed a global plan of action for sustainable energy solutions in situations of displacement to identify concrete actions for accelerated progress towards the vision of safe access to affordable, reliable, sustainable and modern energy services for all displaced people by 2030.

66. Greater access to energy services can improve women's health and well-being, free up their time and enable their economic empowerment. Women and children without clean cooking access spend an average of 1.4 hours a day collecting fuel. In order to enhance the effectiveness of actions under all of the Sustainable Development Goals, there is the need to ensure that all elements of energy planning and

policymaking factor into gender dimensions and actively advance women's leadership at all levels.

67. The energy sector accounts for roughly two-thirds of all anthropogenic greenhouse gas emissions. Effective action towards a low-carbon and climate-resilient energy system is essential for the achievement of the objectives of the Paris Agreement and the 2030 Agenda. Advances in renewable energy and energy efficiency must be accelerated to address climate change.

IV. Review of Sustainable Development Goal 7at the high-level political forum on sustainable development in 2018

68. The high-level political forum on sustainable development is the central platform for follow-up and review of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals. In 2018, under the auspices of the Economic and Social Council, with the theme of "Transformation towards sustainable and resilient societies," the high-level forum undertook the first global review of Sustainable Development Goal 7, as well as Goals 6, 11, 12 and 15.

69. The review of Goal 7 at the high-level political forum was informed, inter alia, by:

(a) Voluntary national reviews submitted by 47 Governments sharing experiences and best practices for achieving the Sustainable Development Goals, including Goal 7;

(b) Outcomes of the Regional Forums on Sustainable Development;

(c) Report of the Secretary-General on progress towards the Sustainable Development Goals (E/2018/64);

(d) Policy briefs on accelerating the achievement of Goal 7 in support of the first review of Goal 7 at the high-level political forum in 2018, including the proposed global agenda for accelerated action on Sustainable Development Goal 7, compiled by the multi-stakeholder technical advisory group on Goal 7, including submissions by over 50 United Nations entities and other organizations;

(e) Outcomes of the global meeting on Goal 7, serving as a multi-stakeholder expert-level preparatory meeting in support of the review of Goal 7 at the high-level political forum, convened by the Department of Economic and Social Affairs, the Economic and Social Commission for Asia and the Pacific and the Ministry of Energy of the Government of Thailand, held in Bangkok from 21 to 23 February 2018;

(f) "Tracking SDG 7: The energy progress report 2018", a joint report prepared by the International Energy Agency, the International Renewable Energy Agency, the Statistics Division of the Department of Economic and Social Affairs, the World Bank Group and the World Health Organization.

(g) Outcomes of multi-stakeholder gatherings related to energy, including the Vienna Energy Forum 2018, the Sustainable Energy for All Forum, the European Development Days and the workshop on Goal 7 organized by the United Nations Environment Programme.

70. The ministerial declaration of the 2018 high-level political forum, which stressed that while progress had been made on some of the Goals and targets, it had not been at the pace required to achieve the 2030 Agenda, and had been uneven across countries and regions, called urgently for accelerating progress toward all targets.

71. In the ministerial declaration, participants noted with concern the need to speed up progress towards the achievement of Goal 7, and called upon Governments and all stakeholders to increase and scale up action, including to: make clean cooking solutions a priority; close the electricity access gap by harnessing the potential of decentralized renewable energy solutions; accelerate the transition towards renewable energy; accelerate the pace of progress in the area of energy efficiency across all sectors of the economy; rationalize inefficient fossil fuel subsidies, taking into account the specific needs and conditions of developing countries; scale-up capacity-building, research and development; and promote innovation and investments.

72. During the review of Goal 7 at the high-level political forum, some stakeholders underscored the need for stepping up efforts to implement the 2030 Agenda and noted, inter alia, that there was a need for regular intergovernmental dialogues on energy and that the proposed global agenda for accelerated action towards the achievement of Sustainable Development Goal 7 presented by the multi-stakeholder technical advisory group, on Goal 7 could provide a useful multi-stakeholder action framework to build on in this regard.

V. United Nations Decade of Sustainable Energy for All 2014–2024: global plan of action for the Decade

73. In 2012, the General Assembly unanimously approved resolution 67/215, by which it declared the Decade of Sustainable Energy for All 2014–2024, underscoring the importance of energy issues for sustainable development. The General Assembly called for the rapid implementation of the strategic objectives of the global plan of action for the Decade, most recently in its resolution 72/224.

74. Building on the achievements to date, the Decade should play a significant role in bringing together all stakeholders to respond to the call for accelerated action towards the achievement of Goal 7, as declared at the 2018 high-level political forum.

75. In order to ensure the strategic alignment of the global plan of action for the Decade with the 2030 Agenda, including by building on technical inputs such as the proposed global agenda for accelerated action towards the achievement of Sustainable Development Goal 7 and the outcomes of the review of Goal 7 at the 2018 high-level political forum, the strategic objectives of the global plan of action for the Decade are further elaborated below, to serve as a framework for multi-stakeholder action:

(a) Advancing the implementation of Goal 7:

(i) Make clean-cooking solutions a top political priority, and put in place specific policies, cross-sectoral plans and public investments, supported by renewed game-changing multi-stakeholder partnerships;

(ii) Close the electricity access gap by establishing detailed plans of action nationally, regionally and globally to "leave no one behind", backed by determined leadership, targeted policies and regulations, multi-stakeholder partnerships, bottom-up actions and increased investment in both on- and off-grid solutions: cross-border grid connections, on-grid renewable energy solutions and decentralized options will all be required to respond to the differing needs of countries and regions;

(iii) Accelerate the pace of transition towards renewable energy, especially in end-use sectors such as transport, construction and industry, to combat climate change and realize substantial economic, health and environmental benefits;

(iv) Harness the potential of decentralized renewable energy solutions, which are key to universal energy access and empowerment of people, companies and communities;

(v) Scale up investments in energy efficiency across all sectors of the economy, supported by well-designed, evidence-based policies, as well as by regional, national and local action plans;

(vi) Double the financing for Sustainable Development Goal 7 globally, from the current annual level of about $500 billion to $1 to $1.2 trillion per year until 2030;

(vii) Scale up capacity-building and education, with renewed, cross-sectoral approaches, to develop human and institutional capacities and required skills in support of universal energy access and energy sector transformation;

(viii) Enhance innovation systems, including research, development, deployment and diffusion in the design and operation of the energy system, especially in the end-use sectors of transport, industry and construction;

(ix) Invest in data collection systems and data analysis to build institutional capacities at the national level and ensure effective monitoring of the Goal 7 targets, including, as needed, through improved, policy-relevant indicators;

(b) Strengthening interlinkages between Goal 7 and the other Sustainable Development Goals:

(i) Harness the potential of cross-sectoral interlinkages to maximize multiple benefits and synergies by promoting energy as an enabler for all of the Sustainable Development Goals: special attention should be given to the interlinkages between energy and poverty eradication, reduction of inequalities, gender equality, jobs, climate change, food security, heath, education, clean water and sanitation, sustainable cities and communities, innovation, transport, industrialization, peace and security and refugees and people in other situations of displacement;

(ii) A unified approach is required to simultaneously achieve Goal 7 and meet the goals of the Paris Agreement on Climate Change: the decarbonization of the world's energy systems and the attainment of the targets of Goal7, including ensuring universal access to modern energy by 2030, are mutually reinforcing and must be advanced at the same time;

(iii) Integrate gender equality and women's empowerment into all energy actions to advance the Sustainable Development Goals;

(iv) Promote sustainable and low-carbon cities with reliable and affordable public transportation systems, energy-efficient built environments and significant shares of their energy needs met by cleaner energy sources;

(c) Addressing regional priorities:

(i) Strengthen cooperation at the regional level to promote innovation and facilitate financing; support regional cross-border power grid connectivity to enhance energy security; advance economic integration and sustainable development; and share best practices that are responsive to regional needs with regard to Goal 7 and its interlinkages with the other Sustainable Development Goals;

(ii) Prioritize ending energy poverty in the most vulnerable countries: investments (by all stakeholders) in sustainable energy in those countries will have a significant positive impact across different Sustainable Development

Goals and demonstrate the true spirit of leaving no one behind — the most vulnerable countries, in particular those in Africa, as well as the least developed countries, landlocked developing countries and small island developing States, deserve special attention, as do countries in conflict or post-conflict situations;

(d) Accelerating transformation towards a sustainable, inclusive and equitable energy future:

(i) Promote transformational investments in developing sustainable, inclusive and equitable energy systems, including by strengthening energy systems through cross-border grid connections and fully incorporating decentralized renewable energy solutions in energy planning, while recognizing that energy transition will take different paths in different parts of the world: promoting such a transformation will require multiple and multifaceted actions by all actors, including a concerted, multilateral approach that paves the way for advancing universal energy access through decentralized solutions, while at the same time advancing the Paris Agreement;

(ii) Transform human behaviour from energy-intensive lifestyles to more sustainable patterns, promoting technological and institutional changes that result in adequate food, clean water, better education and reduction of poverty and gender inequalities, together with reductions in air pollution and greenhouse gas emissions;

(iii) Strengthen decision-making processes by reinforcing improvements in energy data collection, indicators and monitoring efforts, adopting, as needed, a broader range of forward-looking indicators on energy for sustainable development, including interlinkages indicators (for example, indicators linking energy and health and energy and jobs);

(iv) Harness the power of all stakeholders to promote change through advocacy, capacity-building, mobilization and collaborative action, including businesses, civil society, women and youth;

(v) Leverage existing initiatives, such as "Greening the Blue", to promote renewable energy, energy efficiency and related sustainable practices in all United Nations facilities and operations by establishing practical implementation targets and timelines.

76. Turning these strategic objectives into action will require increased international cooperation among all multi-stakeholders on specific, strategic, bold and time-bound plans of action and partnerships, including through the facilitation of efforts by the Secretariat, including the regional commissions, in coordination with the United Nations development system, international organizations, multilateral development banks, businesses, civil society and other stakeholders. UN-Energy should increase coherence and coordination across the United Nations system as well as its collaboration with multi-stakeholders. Support for the multi-stakeholder technical advisory group on Goal 7 should continue to be strengthened and its work should be leveraged to assist such efforts. The midpoint of the United Nations Decade of Sustainable Energy for All 2014–2024, in 2019, could prove to be a useful platform for highlighting progress in the achievement of Goal 7. The Department of Economic and Social Affairs supports the Secretary-General in coordinating the activities of the Decade, facilitates UN-Energy as its secretariat and convenes the multi-stakeholder technical advisory group on Goal 7.

VI. Conclusion

77. In order to support the implementation of the 2030 Agenda for Sustainable Development, including Sustainable Development Goal 7, all stakeholders need to step up and scale up their action. Future global milestones, such as the high-level political forum in 2019, under the auspices of the Economic and Social Council and the General Assembly during its seventy-fourth session, the sessions of the Conference of the Parties to the United Nations Framework Convention of Climate Change and the climate change summit to be convened by the Secretary-General in 2019, present key opportunities. The United Nations Decade of Sustainable Energy for All 2014–2024 should also be leveraged to facilitate the rapid implementation of the strategic objectives as described in this report. These actions can help build sustainable and resilient societies, reaching the furthest behind and ensuring that no one is left behind.